

=> fil reg

FILE 'REGISTRY' ENTERED AT 15:46:30 ON 31 OCT 2007
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STRUCTURE FILE UPDATES: 29 OCT 2007 HIGHEST RN 951883-76-4
DICTIONARY FILE UPDATES: 29 OCT 2007 HIGHEST RN 951883-76-4

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TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

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<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d his nofile

(FILE 'HOME' ENTERED AT 15:01:30 ON 31 OCT 2007)

FILE 'HCAPLUS' ENTERED AT 15:01:37 ON 31 OCT 2007

L1 1 SEA ABB=ON PLU=ON US2006204202/PN
SEL RN

FILE 'REGISTRY' ENTERED AT 15:02:14 ON 31 OCT 2007

L2 20 SEA ABB=ON PLU=ON (120-12-7/BI OR 217-59-4/BI OR
229-87-8/BI OR 230-27-3/BI OR 230-46-6/BI OR 243-17-4/BI
OR 271-58-9/BI OR 271-89-6/BI OR 271-95-4/BI OR 3682-35-7
/BI OR 477-75-8/BI OR 493-77-6/BI OR 56-55-3/BI OR
66-71-7/BI OR 82-05-3/BI OR 85-01-8/BI OR 86-73-7/BI OR
9011-14-7/BI OR 92-24-0/BI OR 92-82-0/BI)
D SCA

L3 1 SEA ABB=ON PLU=ON 229-87-8/RN
D SCA

L4 1 SEA ABB=ON PLU=ON BENZOFURAN/CN
D SCA

L5 1 SEA ABB=ON PLU=ON BENZOXAZOLE/CN
D SCA

L6 1 SEA ABB=ON PLU=ON 217-59-4/RN
D SCA

L7 1 SEA ABB=ON PLU=ON 86-73-7/RN
D SCA

L8 1 SEA ABB=ON PLU=ON 85-01-8/RN
D SCA

L9 1 SEA ABB=ON PLU=ON 230-46-6/RN
D SCA

L10 1 SEA ABB=ON PLU=ON 66-71-7/RN
D SCA

L11 1 SEA ABB=ON PLU=ON 56-55-3/RN
D SCA
L12 1 SEA ABB=ON PLU=ON "11H-BENZO(A) FLUORENE"/CN
D SCA
L13 10 SEA ABB=ON PLU=ON (L3 OR L4 OR L5 OR L6 OR L7 OR L8 OR
L9 OR L10 OR L11 OR L12)

FILE 'HCAPLUS' ENTERED AT 15:30:01 ON 31 OCT 2007

L14 44811 SEA ABB=ON PLU=ON L13
L15 QUE ABB=ON PLU=ON WAVEGUID? OR (WAVE# OR WAVING) (2A) GUI
D?
L16 24 SEA ABB=ON PLU=ON L14 AND L15
L17 QUE ABB=ON PLU=ON OPTIC? OR LIGHT? OR SPECTROSCOP?
L18 24 SEA ABB=ON PLU=ON L16 AND L17
L19 15 SEA ABB=ON PLU=ON L18 AND (PY<=2003 OR PRY<=2003 OR
AY<=2003)
L20 1 SEA ABB=ON PLU=ON "11H-BENZO(B) FLUORENE"/CN
L21 600 SEA ABB=ON PLU=ON L20
L22 1 SEA ABB=ON PLU=ON L21 AND L15
L23 15 SEA ABB=ON PLU=ON L19 OR L22
L24 14 SEA ABB=ON PLU=ON L23 NOT L1

=> fil hap

'HAP' IS NOT A VALID FILE NAME

SESSION CONTINUES IN FILE 'REGISTRY'

Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files that are available. If you have requested multiple files, you can specify a corrected file name or you can enter "IGNORE" to continue accessing the remaining file names entered.

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 15:46:35 ON 31 OCT 2007

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FILE COVERS 1907 - 31 Oct 2007 VOL 147 ISS 19

FILE LAST UPDATED: 30 Oct 2007 (20071030/ED)

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=> => fil hcap

FILE 'HCAPLUS' ENTERED AT 15:52:49 ON 31 OCT 2007

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FILE COVERS 1907 - 31 Oct 2007 VOL 147 ISS 19

FILE LAST UPDATED: 30 Oct 2007 (20071030/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l24 ibib abs hitstr hitind 1-14

L24 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:474844 HCAPLUS

DOCUMENT NUMBER: 143:3696

TITLE: Method and apparatus using a surface-selective nonlinear optical technique for detection of probe-target interactions without labels

INVENTOR(S): Salafsky, Joshua S.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 46 pp., Cont.-in-part of U.S. Ser. No. 907,038, abandoned.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005118731	A1	20050602	US 2004-970754	20041021
US 2002127563	A1	20020912	US 2001-907038	20010717
PRIORITY APPLN. INFO.:			US 2001-260261P	20010108
			US 2001-260300P	20010108
			US 2001-262214P	

200101
17<--
US 2001-907038 B2200107
17

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AB A surface-selective nonlinear **optical** technique, such as second harmonic or sum frequency generation, is used to detect target-probe binding reactions or their effects, at an interface, in the presence of indicators. In addition, the direction of the nonlinear **light** is scattered from the interface in a well-defined direction and therefore its incidence at a detector some distance from the interface may be easily mapped to a specific and known location at the interface.

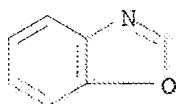
IT 273-53-0D, Benzoxazole, derivs.

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(method and apparatus using a surface-selective nonlinear **optical** technique for detection of probe-target interactions without labels)

RN 273-53-0 HCAPLUS

CN Benzoxazole (CA INDEX NAME)



IC ICM G01N033-543

INCL 436518000

CC 9-1 (Biochemical Methods)

Section cross-reference(s): 1

ST app nonlinear **optics** probe target interaction detection

IT Cyanine dyes

(hemicyanine; method and apparatus using a surface-selective nonlinear **optical** technique for detection of probe-target interactions without labels)

IT Cell

Charge coupled devices

Cyanine dyes

Drug screening

Drugs

Fiber **optics**

Fluorescent indicators

Liposomes

Optical waveguides

Sum-frequency generation

Surface plasmon resonance

Virus

(method and apparatus using a surface-selective nonlinear **optical** technique for detection of probe-target interactions without labels)

IT Antibodies and Immunoglobulins

Antigens

Carbohydrates, biological studies

G protein-coupled receptors

Hormones, animal, biological studies

Nucleic acids

Nucleosides, biological studies

Oligosaccharides, biological studies

Peptide nucleic acids

Proteins

Receptors

Toxins

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(method and apparatus using a surface-selective nonlinear

optical technique for detection of probe-target

interactions without labels)

IT Polarizability

(optical, hyperpolarizability; method and apparatus using a

surface-selective nonlinear **optical** technique for

detection of probe-target interactions without labels)

IT Ion channel

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(receptors; method and apparatus using a surface-selective nonlinear

optical technique for detection of probe-target

interactions without labels)

IT 61-73-4, Methylene blue 79-41-4D, Methacrylic acid, salts and

esters, polymers of 92-84-2D, Phenothiazine, reaction with

stilbazole 198-55-0D, Perylene, derivs. 273-53-0D,

Benzoxazole, derivs. 288-42-6D, Oxazole, derivs. 1283-93-8

2321-07-5D, Fluorescein, derivs. 5998-92-5D, 5-aryl derivative

38620-93-8D, Stilbazole, reaction with phenothiazine 70380-75-5D,

2-aryl derivative

RL: ARG (Analytical reagent use); ANST (Analytical study); USES

(Uses)

(method and apparatus using a surface-selective nonlinear

optical technique for detection of probe-target

interactions without labels)

L24 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:913395 HCAPLUS

DOCUMENT NUMBER: 139:393104

TITLE: Kit for bioaffinity assay development and serial
analysis including arrays of reference substanceINVENTOR(S): Duveneck, Gert L.; Oroszlan, Peter; Pawlak,
Michael

PATENT ASSIGNEE(S): Zeptosens A.-G., Switz.

SOURCE: PCT Int. Appl., 85 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003096018	A2	20031120	WO 2003-EP4717	200305 06

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WO 2003096018 A3 20040318

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,

NO, NZ, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TR, TT,
 TZ, UA, UG, US, UZ, VN, YU, ZA, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
 NE, SN, TD, TG

AU 2003242251 A1 20031111 AU 2003-242251

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EP 1506403 A2 20050216 EP 2003-729981

200305
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
 PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,
 SK

US 2005163659 A1 20050728 US 2004-514166

200411
 12

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PRIORITY APPLN. INFO.: CH 2002-791

A

200205
 13

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WO 2003-EP4717

W

200305
 06

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AB The invention relates to a kit for assay development and for carrying out a plurality of analyses, comprising: a carrier substrate and a placement body jointly forming an arrangement of a plurality of sample containers, consisting of said carrier substrate as a base plate, in addition to a plurality of immobilized bonding partners for the detection of one or several analytes in one or several samples in a bioaffinity assay, said bonding partners being arranged and immobilized on the carrier substrate inside the sample containers in resp. two-dimensional arrays of discrete measuring areas, wherein resp. at least one measuring area of an array or a partial surface inside an array or sample container is provided on the carrier substrate for referencing purposes, and the surface d. of the immobilized bonding partners, in relation to the surface of the measuring areas, is less than the surface d. of a full, i.e. extensive monolayer of said bonding partners. The composition of the inventive kit is such that, surprisingly, it enables a full series of measurements to be carried out on an individual carrier substrate. The invention also relates to an anal. system wherein the inventive kit is used, and to anal. detection methods based thereon and the use thereof. Thus an array kit was prepared for the determination of IL-4 using immobilized antibodies to IL-4. Thus a glass substrate, that had been previously modulated with gratings was coated with a tantalum pentoxide layer; the hydrophilic metal oxide surface was coated with a self-assembled mono-dodecyl phosphate layer and plotted in arrays with monoclonal mouse antibodies of various concns. Reference arrays were plotted along the antibody arrays; the reference substance was Cy5-BSA.

IT 229-87-8D, Phenanthridine, derivs., alkaloids

271-89-6D, Benzofuran, derivs.

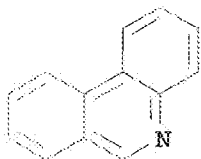
RL: ANT (Analyte); ARG (Analytical reagent use); ANST (Analytical

study); USES (Uses)

(kit for bioaffinity assay development and serial anal. including arrays of reference substance)

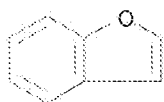
RN 229-87-8 HCAPLUS

CN Phenanthridine (CA INDEX NAME)



RN 271-89-6 HCAPLUS

CN Benzofuran (CA INDEX NAME)



IC ICM G01N033-543

ICS C12Q001-68

CC 9-1 (Biochemical Methods)

Section cross-reference(s): 3, 4, 5, 17

IT Affinity

Agrochemicals

Aptamers

Blood analysis

CCD cameras

Clinical analysis

DNA microarray technology

Diagnosis

Diffraction gratings

Drug screening

Egg white

Egg yolk

Environmental analysis

Eubacteria

Fluorometry

Food analysis

Human

Immunoassay

Nucleic acid hybridization

Optical waveguides

Photodiodes

Photolithography

Plant analysis

Protein microarray technology

Saliva

Salmonella

Self-assembly

Soil analysis

Surfactants

Test kits

Transparency

Urine analysis

Virus

(kit for bioaffinity assay development and serial anal. including arrays of reference substance)

IT 57-50-1, Sugar, analysis 74-86-2D, Acetylene, derivs. 76-78-8D, Quassin, derivs. 84-65-1D, Anthraquinone, derivs. 87-66-1, Pyrogallol 90-47-1, 9-Oxoxanthene 90-47-1D, Xanthenone, derivs. 91-22-5D, Quinoline, derivs. 91-64-5D, 2H-1-Benzopyran-2-one, derivs. 94-41-7D, Chalcone, derivs. 106-57-0D, Diketopiperazine, derivs. 107-43-7D, Betaine, derivs. 108-73-6D, Phloroglucine, derivs. 109-97-7D, Pyrrole, derivs. 119-61-9D, Benzophenone, derivs. 120-72-9D, Indole, derivs. 120-80-9D, Catechol, derivs. 123-31-9D, Hydroquinone, derivs. 130-15-4D, 1,4-Naphthalenedione, derivs. 229-87-8D, Phenanthridine, derivs., alkaloids 271-89-6D, Benzofuran, derivs. 288-32-4D, Imidazole, derivs., alkaloids 524-97-0D, Pterocarpine, derivs. 544-25-2D, Tropilidene, derivs., alkaloids 588-59-0D, Stilbene, oligo derivs. 970-73-0D, Gallocatechin, derivs. 5375-87-1D, Pyranocoumarin, derivs. 8001-81-8D, Carboline, derivs. 9004-34-6D, Cellulose, derivs. 9005-25-8, Starch, analysis 9005-32-7D, Alginic acid, derivs. 20342-64-7D, 1H-Indole-4,7-dione, derivs. 29565-36-4D, Cardenolide, derivs. 62996-74-1D, Staurosporine, derivs. 79392-34-0, Saframycin
RL: ANT (Analyte); ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(kit for bioaffinity assay development and serial anal. including arrays of reference substance)

L24 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:506901 HCAPLUS
DOCUMENT NUMBER: 139:92495
TITLE: Plastic optical waveguiding material and optical waveguide
INVENTOR(S): Miyao, Kenji
PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003185857	A	20030703	JP 2001-380649	20011213

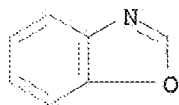
PRIORITY APPLN. INFO.: JP 2001-380649
20011213

AB The invention refers to a plastic optical waveguiding material and optical waveguide, comprising polyoxazole compound with repeating unit $-(C:ONHXNHC:OY)n-$ [n = 1 - 1000; X = divalent organic group; Y = n-alkane, hexane, halo-substituted or unsubstituted Ph, naphthalene, or two Ph rings bridged by O, SO₂ or halo].
IT 273-53-0, Benzoxazole

RL: DEV (Device component use); USES (Uses)
 (derivs., polymers; plastic optical waveguiding
 material and optical waveguide)

RN 273-53-0 HCAPLUS

CN Benzoxazole (CA INDEX NAME)



IC ICM G02B006-12

ICS C08G073-22; G02B006-13

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST polymer optical waveguide polybenzoxazole

IT Optical waveguides
 (polymeric; plastic optical waveguiding
 material and optical waveguide)

IT 273-53-0, Benzoxazole

RL: DEV (Device component use); USES (Uses)
 (derivs., polymers; plastic optical waveguiding
 material and optical waveguide)

IT 31475-82-8 32201-94-8D, polybenzoxazoles 72123-18-3D,
 polybenzoxazoles 325828-94-2 554455-41-3 554455-43-5
 554455-44-6 554455-50-4D, polybenzoxazoles 554455-52-6D,
 polybenzoxazoles 554455-54-8D, polybenzoxazoles

RL: DEV (Device component use); USES (Uses)
 (plastic optical waveguiding material and
 optical waveguide)

L24 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:497449 HCAPLUS

DOCUMENT NUMBER: 139:44221

TITLE: Preparation of photo-sensitive SiO₂ gel film for
 fine-patterning in manufacture of
 optical waveguide

INVENTOR(S): Zhao, Gaoyang; Zhao, Guirong; Hu, Xiongwei

PATENT ASSIGNEE(S): Xian University of Sciences & Technology, Peop.
 Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 16
 pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 1359032	A	20020717	CN 2001-145262	200112 28

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PRIORITY APPLN. INFO.: CN 2001-145262

200112
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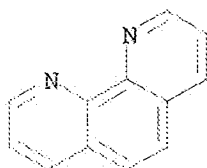
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AB The photo-sensitive film is prepared by stirring a solution containing tetraethoxysilane 1, H₂O 2-4, HCl 0.05-0.2, ethanol 10-40, and phenanthroline 0.5-2 parts for 4 h, and forming a film on a glass of Si substrate by pulling method. The prepared film is soluble in ethanol but insol. after UV irradiation, and fine patterns are thus manufactured

IT 66-71-7, 1,10-Phenanthroline
 RL: MOA (Modifier or additive use); USES (Uses)
 (preparation of photo-sensitive SiO₂ gel film for fine-patterning)

RN 66-71-7 HCAPLUS

CN 1,10-Phenanthroline (CA INDEX NAME)



IC ICM G03F007-004
 ICS G03F007-16

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Waveguides**
 (preparation of photo-sensitive SiO₂ gel film for fine-patterning in manufacture of **optical waveguide**)

IT 66-71-7, 1,10-Phenanthroline
 RL: MOA (Modifier or additive use); USES (Uses)
 (preparation of photo-sensitive SiO₂ gel film for fine-patterning)

L24 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STM

ACCESSION NUMBER: 2002:522159 HCAPLUS

DOCUMENT NUMBER: 137:59858

TITLE: Method and apparatus using a surface-selective nonlinear **optical** technique

INVENTOR(S): Salafsky, Joshua S.

PATENT ASSIGNEE(S): USA

SOURCE: PCT Int. Appl., 88 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002054071	A1	20020711	WO 2001-US22441	20010717

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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH,

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 TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,
 TD, TG

CA 2434076 A1 20020711 CA 2001-2434076 200107
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 JP 2004530105 T 20040930 JP 2002-554718 200107
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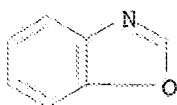
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 US 2001-262214P P 200101
 17

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 WO 2001-US22441 W 200107
 17

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 AB A surface-selective nonlinear **optical** technique, such as
 second harmonic or sum frequency generation, is used to detect
 target-probe binding reactions or their effects, at an interface,
 without the use of labels. In addition, the direction of the nonlinear
light is scattered from the interface in a well-defined
 direction and therefore its incidence at a detector some distance
 from the interface may be easily mapped to a specific and known
 location at the interface.

IT 273-53-0D, Benzoxazole, derivs.
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (method and apparatus using a surface-selective nonlinear
optical technique)

RN 273-53-0 HCAPLUS
 CN Benzoxazole (CA INDEX NAME)



IC ICM G01N033-543

CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 1

ST app surface selective nonlinear **optical** technique; biochip
optical imaging hybridization drug screening protein DNA RNA

IT Cooperative phenomena
 (antagonism; method and apparatus using a surface-selective nonlinear
optical technique)

IT Apparatus
 (array; method and apparatus using a surface-selective nonlinear
optical technique)

IT Surface electric charge
 (biol.; method and apparatus using a surface-selective nonlinear
optical technique)

IT Unsaturated compounds
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (cyanines; method and apparatus using a surface-selective nonlinear
optical technique)

IT Second-harmonic generation
 (electrooptical; method and apparatus using a surface-selective
 nonlinear **optical** technique)

IT Imaging
 (endoscopy; method and apparatus using a surface-selective nonlinear
optical technique)

IT Wave
 (evanescent, reflection; method and apparatus using a
 surface-selective nonlinear **optical** technique)

IT Cyanine dyes
 (hemicyanine; method and apparatus using a surface-selective nonlinear
optical technique)

IT Cyanine dyes
 (indodicarbo-; method and apparatus using a surface-selective
 nonlinear **optical** technique)

IT Ion channel
 RL: ANT (Analyte); ARG (Analytical reagent use); ANST (Analytical
 study); USES (Uses)
 (ligand-gated; method and apparatus using a surface-selective
 nonlinear **optical** technique)

IT Proteins
 RL: PRP (Properties)
 (membrane; method and apparatus using a surface-selective nonlinear
optical technique)

IT Affinity
 Animal cell
 Animal tissue
 Azo dyes
 Cyanine dyes
 Electrostatic force
 Fiber **optics**
 Interface
 Labels
 Latex
 Mathematical methods
 Microarray technology
 Molecular recognition
 Nanoparticles
Optical detectors
Optical sensors
 Planar **waveguides** (**optical**)
 Protein sequences
 Semiconductor materials

Simulation and Modeling
Sum-frequency generation
UV radiation
Virus
 (method and apparatus using a surface-selective nonlinear
 optical technique)
IT Neuropeptides
 RL: ANT (Analyte); ANST (Analytical study)
 (method and apparatus using a surface-selective nonlinear
 optical technique)
IT Antibodies and Immunoglobulins
Antigens
Carbohydrates, analysis
Enzymes, analysis
Haptens
Hormones, animal, analysis
Ligands
Nucleic acids
Nucleosides, analysis
Oligonucleotides
Oligosaccharides, analysis
Peptide nucleic acids
Peptides, analysis
Polynucleotides
Receptors
Toxins
cDNA
 RL: ANT (Analyte); ARG (Analytical reagent use); ANST (Analytical
study); USES (Uses)
 (method and apparatus using a surface-selective nonlinear
 optical technique)
IT Proteins
 RL: ANT (Analyte); ARG (Analytical reagent use); PRP (Properties);
ANST (Analytical study); USES (Uses)
 (method and apparatus using a surface-selective nonlinear
 optical technique)
IT DNA
RNA
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES
(Uses)
 (method and apparatus using a surface-selective nonlinear
 optical technique)
IT Polyenes
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (method and apparatus using a surface-selective nonlinear
 optical technique)
IT Polyimides, analysis
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (method and apparatus using a surface-selective nonlinear
 optical technique)
IT Glass, uses
 RL: DEV (Device component use); USES (Uses)
 (method and apparatus using a surface-selective nonlinear
 optical technique)
IT Metals, uses
 RL: DEV (Device component use); USES (Uses)
 (method and apparatus using a surface-selective nonlinear
 optical technique)
IT Polyamide fibers, uses
 RL: DEV (Device component use); USES (Uses)

- (method and apparatus using a surface-selective nonlinear optical technique)
- IT Phospholipids, properties
RL: PRP (Properties)
(method and apparatus using a surface-selective nonlinear optical technique)
- IT Fluids
(microfluids; method and apparatus using a surface-selective nonlinear optical technique)
- IT Egg
(oocyte; method and apparatus using a surface-selective nonlinear optical technique)
- IT Biosensors
(optical; method and apparatus using a surface-selective nonlinear optical technique)
- IT Silanes
RL: DEV (Device component use); USES (Uses)
(organosilanes; method and apparatus using a surface-selective nonlinear optical technique)
- IT Nucleic acid bases
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(pairing; method and apparatus using a surface-selective nonlinear optical technique)
- IT Phosphates, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(phosphoramidates; method and apparatus using a surface-selective nonlinear optical technique)
- IT Electrooptical effect
(second-harmonic generation; method and apparatus using a surface-selective nonlinear optical technique)
- IT 61-73-4, Methylene blue 92-84-2, Phenothiazine 103-33-3D, derivs. 103-33-3D, Azobenzene, sulfonyl derivs. 108-78-1D, Melamine, derivs. 198-55-0D, Perylene, derivs. 273-53-0D, Benzoxazole, derivs. 288-42-6D, Oxazole, cycloalkano and diaryl derivs. 1283-93-8 2321-07-5D, Fluorescein, derivs. 3784-99-4D, Stilbazium, derivs. 5998-92-5D, aryl derivs. 17082-33-6D, derivs. 25087-26-7D, Polymethacrylic acid, derivs. 25265-76-3D, Diaminobenzene, derivs. 38620-93-8, Stilbazole 70380-75-5D, aryl derivs. 110360-50-4 155862-95-6 155863-00-6 439858-43-2 439858-44-3D, derivs.
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method and apparatus using a surface-selective nonlinear optical technique)
- IT 1303-00-0, Gallium arsenide, uses 1306-23-6, Cadmium sulfide, uses 1306-24-7, Cadmium selenide, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-57-5, Gold, uses 13463-67-7, Titanium oxide, uses 14014-97-2, Gallium phosphate 14693-82-4, Indium phosphate
RL: DEV (Device component use); USES (Uses)
(method and apparatus using a surface-selective nonlinear optical technique)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

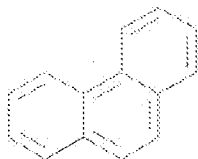
L24 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:399458 HCAPLUS

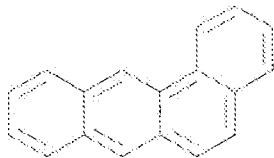
DOCUMENT NUMBER: 135:220319

TITLE: Synthetic receptors as sensor coatings for molecules and living cells

AUTHOR(S): Dickert, Franz L.; Hayden, Oliver; Halikias, Konstantinos P.
CORPORATE SOURCE: Institute of Analytical Chemistry, Vienna University, Vienna, A-1090, Austria
SOURCE: Analyst (Cambridge, United Kingdom) (2001), 126(6), 766-771
CODEN: ANALAO; ISSN: 0003-2654
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Noncovalent molecularly imprinted polymers are applied as sensitive coatings to planar **waveguides** and mass-sensitive devices for the selective detection of various groups of analytes in the gaseous and aqueous phases. Cavity imprinting in the bulk of the sensor material as well as surface imprinting techniques were used to enrich analytes ranging from sub-nanometers to micrometers in analyte size. The coated devices provide sensitivity to e.g. polycyclic aromatic hydrocarbons, xanthine derivs., complex coffee samples and whole microorganisms.
IT 85-01-8, Phenanthrene, analysis
RL: ANT (Analyte); ANST (Analytical study)
(analytes and imprinting mols.; synthetic receptors as sensor coatings for mols. and living cells)
RN 85-01-8 HCAPLUS
CN Phenanthrene (CA INDEX NAME)



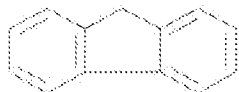
IT 56-55-3, Benz[a]anthracene
RL: ANT (Analyte); ANST (Analytical study)
(analytes; synthetic receptors as sensor coatings for mols. and living cells)
RN 56-55-3 HCAPLUS
CN Benz[a]anthracene (CA INDEX NAME)



CC 80-2 (Organic Analytical Chemistry)
Section cross-reference(s): 10, 17, 37
IT **Optical** sensors
Surface acoustic wave sensors
(synthetic receptors as sensor coatings for mols. and living cells)
IT 58-08-2, Caffeine, analysis 58-55-9, Theophylline, analysis
83-32-9, Acenaphthene 85-01-8, Phenanthrene, analysis
91-20-3, Naphthalene, analysis 120-12-7, Anthracene, analysis

129-00-0, Pyrene, analysis 198-55-0, Perylene
RL: ANT (Analyte); ANST (Analytical study)
(analytes and imprinting mols.; synthetic receptors as sensor
coatings for mols. and living cells)
IT 56-55-3, Benz[a]anthracene 218-01-9, Chrysene
RL: ANT (Analyte); ANST (Analytical study)
(analytes; synthetic receptors as sensor coatings for mols. and
living cells)
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L24 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:692957 HCAPLUS
DOCUMENT NUMBER: 123:288647
TITLE: Polymeric **waveguides** for passive and
active **optical** interconnection
AUTHOR(S): Yardley, James T.; Beeson, Karl W.; Ferm, Paul;
Knapp, Charles; McFarland, Michael; Nahata,
Ajay; Wu, Chengjiu
CORPORATE SOURCE: Allied-Signal Inc., Morristown, NJ, 07962, USA
SOURCE: Polymer Preprints (American Chemical Society,
Division of Polymer Chemistry) (1994),
35(2), 92
CODEN: ACPPAY; ISSN: 0032-3934
PUBLISHER: American Chemical Society, Division of Polymer
Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Electrooptic response and thermal stability of a member of a new
family of fluorene-based cardo polymers were reported. The
materials described come very close to providing the required
performance characteristics for practical **waveguide**
devices.
IT 86-73-7D, Fluorene, derivs., cardo polymers
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrooptic response and thermal stability of fluorene-based
cardo polymers as **waveguides** for passive and active
optical interconnection)
RN 86-73-7 HCAPLUS
CN 9H-Fluorene (CA INDEX NAME)



CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 73
ST polymeric **waveguide** electrooptic thermal stability;
fluorene based cardo polymer electrooptic thermal
IT **Waveguides**
(electrooptic response and thermal stability of fluorene-based
cardo polymers as **waveguides** for passive and active
optical interconnection)
IT Cardo polymers
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(fluorene-based; electrooptic response and thermal stability of

fluorene-based cardo polymers as **waveguides** for passive and active **optical** interconnection)

IT 86-73-7D, Fluorene, derivs., cardo polymers

RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrooptic response and thermal stability of fluorene-based cardo polymers as **waveguides** for passive and active **optical** interconnection)

L24 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1993:467276 HCAPLUS

DOCUMENT NUMBER: 119:67276

TITLE: Device and method for detection of compounds which intercalate with nucleic acids

INVENTOR(S): Weetall, Howard H.

PATENT ASSIGNEE(S): United States Dept. of Commerce, USA

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9310266	A1	19930527	WO 1992-US9916	19921120

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W: AU, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE				
AU 9331402	A	19930615	AU 1993-31402	19921120

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PRIORITY APPLN. INFO.:	US 1991-796391	A	19911122
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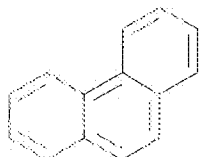
WO 1992-US9916	A	19921120
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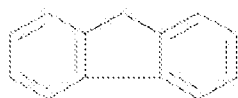
AB A compound which intercalates with a nucleic acid is detected or determined in a sample by placing a fluorescent intercalating agent and a sample in close proximity to a **waveguide** coated with a nucleic acid and allowing them to react so that the sample competes with the fluorescent intercalating agent for nucleic acid binding sites. Excitation **light** is passed through the **waveguide** to excite the fluorescent intercalating agent coming within the evanescent wave; radiated **light** is detected from the fluorescent intercalating agent at the initiating end with a photodetector, and compared with that observed in the absence of sample. The **waveguide** may be an **optical** fiber or a plate. The method may be used to detect toxic substances in air, groundwater, etc. Thus, 1 μ mol ethidium bromide in a 10- μ L sample of rainwater was placed in contact with a silica fiber **optic waveguide** coated with double-stranded DNA and reacted for 15 min. **Light** of wavelength 500 nm was passed through the fiber, and all radiation

exiting the end face was collected with a lens and directed to a photodetector.

IT 85-01-8D, Phenanthrene, metal derivs. 86-73-7D,
9H-Fluorene, derivs.
RL: ANST (Analytical study)
(nucleic acid-intercalating, intercalating agent determination by
competition with, on nucleic acid-coated **waveguide**)
RN 85-01-8 HCAPLUS
CN Phenanthrene (CA INDEX NAME)



RN 86-73-7 HCAPLUS
CN 9H-Fluorene (CA INDEX NAME)



IC ICM C12Q001-68
ICS C12M001-34
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 4
ST DNA intercalator detn **optic fiber**; nucleic acid
intercalator detn **waveguide**
IT Dyes
(acridine, nucleic acid-intercalating, intercalating agent determination
by competition with, on nucleic acid-coated **waveguide**)
IT Poisons
(determination of, by nucleic acid intercalation, nucleic acid-coated
waveguide and competing fluorescent intercalating agent
for)
IT Actinomyces
(intercalating agent determination by competition with, on nucleic
acid-coated **waveguide**)
IT Nucleic acids
RL: ANST (Analytical study)
(intercalating agents for, determination of, **waveguide** and
competing fluorescent intercalating agent for)
IT **Optical fibers**
Plates and Trays
(nucleic acid-coated, as **waveguides** for nucleic
acid-intercalating agent determination, competing fluorescent
intercalating agent in relation to)
IT **Waveguides**
(nucleic acid-coated, for nucleic acid-intercalating agent determination,
fluorescent intercalating agent for)
IT Air analysis
Blood analysis
(nucleic acid-intercalating compds. determination in, nucleic acid-coated

- waveguide and competing fluorescent intercalating agent for)
- IT Fluorescent substances
Aflatoxins
Epoxides
RL: ANST (Analytical study)
(nucleic acid-intercalating, intercalating agent determination by competition with, on nucleic acid-coated waveguide)
- IT Deoxyribonucleic acids
Ribonucleic acids
RL: ANST (Analytical study)
(waveguide coated with, for intercalating agent determination by competition with fluorescent intercalating agent)
- IT Quinones
RL: ANST (Analytical study)
(anthracyclines, nucleic acid-intercalating, intercalating agent determination by competition with, on nucleic acid-coated waveguide)
- IT Molecular association
(intercalation, agents, determination of, competing fluorescent intercalating agent and nucleic acid-coated waveguide for)
- IT Aromatic compounds
RL: ANT (Analyte); ANST (Analytical study)
(polycyclic, determination of, by nucleic acid intercalation, nucleic acid-coated waveguide and competing fluorescent intercalating agent for)
- IT Hydrocarbons, uses
RL: ANST (Analytical study)
(polycyclic, nucleic acid-intercalating, intercalating agent determination by competition with, on nucleic acid-coated waveguide)
- IT 7732-18-5, Water, analysis
RL: ANST (Analytical study)
(nucleic acid-intercalating compds. determination in, nucleic acid-coated waveguide and competing fluorescent intercalating agent for)
- IT 65-61-2, Acridine orange 66-97-7D, Furocoumarin, derivs.
85-01-8D, Phenanthrene, metal derivs. 86-73-7D,
9H-Fluorene, derivs. 91-22-5D, Quinoline, derivs. 92-62-6,
3,6-Acridinediamine 92-82-0D, Phenazine, derivs. 92-84-2D,
Phenothiazine, derivs. 147-14-8 260-94-6D, Acridine, derivs.
486-25-9D, Fluorenone, derivs. 492-22-8D, Thioxanthene, derivs.
1239-45-8, Ethidium bromide 1404-00-8, Mitomycin 4440-80-6D,
derivs. 4803-27-4, Anthramycin 7440-06-4D, Platinum, complexes
65589-70-0, Acridine 148937-53-5, Norphilin A
RL: ANST (Analytical study)
(nucleic acid-intercalating, intercalating agent determination by competition with, on nucleic acid-coated waveguide)

L24 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1993:120431 HCAPLUS

DOCUMENT NUMBER: 118:120431

TITLE: Miniaturized sensor for ionizing radiation,
especially for biomedical applications

INVENTOR(S): Lefkowitz, Steven M.; Leugers, Mary A.;
Brownell, Steven J.; Helmer, Deborah C.; Kastl,
Patrick E.; Chrisman, Ray; Langvardt, Patrick W.

PATENT ASSIGNEE(S): Dow Chemical Co., USA

SOURCE: U.S., 8 pp.

DOCUMENT TYPE: CODEN: USXXAM
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: 1 English
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5166073	A	19921124	US 1989-347692	19890505

PRIORITY APPLN. INFO.:

<--
 US 1989-347692

198905
 05

AB An optical sensor is disclosed which is useful for the detection of ionizing radiation emitted from an analyte in a fluid. The sensor is composed of a permeable scintillator having a high surface area to scintillator volume ratio and an optical waveguide located in working relation to the scintillator to collect light photons generated in response to an ionizing radiation source. The sensor is especially useful for biomedical applications. Increased sensitivity allows for miniaturization and implantation in a blood vessel of a small exptl. animal. The scintillator may be anthracene, naphthacene, pyrene, carbazole, etc. Schematics of the sensor are included. When the sensor of the invention was used to measure 14C-labeled 1-methoxy-2-propanol in samples of rat blood, the obtained log-log plot of the results was linear with relatively little scatter, indicating that the sensor was stable over a wide range of activity. The sensor was also used to determine 14C-labeled salicylic acid in the hepatic-portal and peripheral circulation of a dog. The pharmacokinetic results showed that the measured absorption rate, steady-state concentration, and elimination rate for salicylic acid in the blood corresponded to values using in vitro methods.

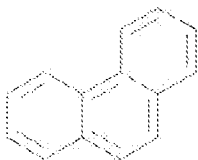
IT 85-01-8, Phenanthrene, uses 86-73-7, 9H-Fluorene

RL: USES (Uses)

(as scintillator, in sensor for ionizing radiation-emitting analyte in fluid, for pharmacokinetic and other biomedical applications)

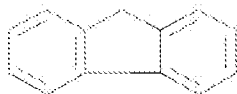
RN 85-01-8 HCAPLUS

CN Phenanthrene (CA INDEX NAME)



RN 86-73-7 HCAPLUS

CN 9H-Fluorene (CA INDEX NAME)



IC H01L070-00
 INCL 436057000
 CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 1, 8
 IT **Optical fibers**
 Scintillators
 (in sensor for ionizing radiation-emitting analyte in fluid, for pharmacokinetic and other biomedical applications)
 IT **Waveguides**
 (optical, in sensor for ionizing radiation-emitting analyte in fluid, for pharmacokinetic and other biomedical applications)
 IT **85-01-8, Phenanthrene, uses 86-73-7, 9H-Fluorene**
 86-74-8, Carbazole 91-20-3, Naphthalene, uses 92-24-0,
 Naphthacene 120-12-7, Anthracene, uses 129-00-0, Pyrene, uses
 132-64-9, Diphenylene oxide 135-48-8, Pentacene 206-44-0,
 Fluoranthene 213-46-7, Picene 218-01-9, Chrysene 258-31-1,
 Hexacene
 RL: USES (Uses)
 (as scintillator, in sensor for ionizing radiation-emitting analyte in fluid, for pharmacokinetic and other biomedical applications)

L24 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1991:546206 HCAPLUS

DOCUMENT NUMBER: 115:146206

TITLE: Correlation of single-mode fiber radiation response and fabrication parameters

AUTHOR(S): Friebele, E. Joseph; Askins, Charles G.; Shaw, Cathy M.; Gingerich, Michael E.; Harrington, Calvin C.; Griscom, David L.; Tsai, Tsung Ein; Paek, Un Chul; Schmidt, William H.

CORPORATE SOURCE: AT and T Bell Lab., Princeton, NJ, 08540, USA

SOURCE: Applied Optics (1991), 30(15), 1944-57

CODEN: APOPAI; ISSN: 0003-6935

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Statistically significant correlations were established between certain fabrication parameters of matched clad, single-mode optical fiber waveguides and their response to an ionizing radiation dose of 2000 rad. The recovery data measured at -35° following exposure were fit to nth-order kinetic behavior where the adjustable parameters are the initial and permanent incremental losses (A0 and Af, resp.), the half-life of attenuation τ , and the order of kinetics n. The set of fibers chosen for anal. had Ge-doped silica cores. In fibers with Ge-F doped silica clads, A0 correlates with the concentration of Ge-doped into the fiber core; Af correlates with the ratio of oxygen to reagent used during core deposition; and τ and n correlate with a two-way interaction of core oxygen and fiber draw speed. In P-F-doped clad fibers, the P concentration correlates with the order of the kinetics of recovery.

IT 86-73-7, Fluorene

RL: PRP (Properties)

(optical fibers using, fabrication parameters and
radiation response of)

RN 86-73-7 HCAPLUS

CN 9H-Fluorene (CA INDEX NAME)



CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)

ST optical fiber waveguide radiation response
fabrication

IT Radiation, chemical and physical effects
(on optical fiber waveguides)

IT Waveguides
(optical, fiber, fabrication parameters and radiation
response of)

IT 86-73-7, Fluorene 7440-56-4, Germanium, properties
7631-86-9, Silica, properties

RL: PRP (Properties)

(optical fibers using, fabrication parameters and
radiation response of)

L24 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:541834 HCAPLUS

DOCUMENT NUMBER: 113:141834

TITLE: Plasma-assisted deposition of integrated
optic waveguides

AUTHOR(S): Gawne, D. T.; Nourshargh, N.; Kandasamy, I.;
Starr, E. M.

CORPORATE SOURCE: Dep. Mater. Technol., Brunel Univ.,
Uxbridge/Middlesex, UK

SOURCE: Surface Engineering (1990), 6(2),
107-12

CODEN: SUENET; ISSN: 0267-0844

DOCUMENT TYPE: Journal

LANGUAGE: English

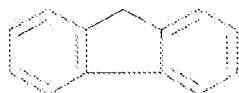
AB A plasma assisted CVD technique for fabrication of optical
planar waveguides on silica substrates is described.
Silica films doped with germania were deposited at 1000-1100°
with <0.3 dB cm⁻¹ attenuation, sharp refractive index profiles, and
satisfactory adhesion and integrity. Deposition was achieved at
temps. down to 100°, but resultant film attenuation adhesion,
and integrity are substantially inferior. Codeposition of F
improves the mech. properties, while cladding and buffer layers are
expected to enhance the optical performance of the
waveguides.

IT 86-73-7, Fluorene

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(codeposition of, in plasma assisted chemical vapor deposition of
integrated optical waveguides)

RN 86-73-7 HCAPLUS

CN 9H-Fluorene (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 ST plasma chem vapor deposition silica **waveguide**; germania silica deposition **waveguide**
 IT **Waveguides**
 (optical, plasma-assisted chemical vapor deposition of germanium-doped silica films for)
 IT 86-73-7, Fluorene
 RL: PEP (Physical, engineering or chemical process); PROC (Process) (codeposition of, in plasma assisted chemical vapor deposition of integrated **optical waveguides**)
 IT 1310-53-8, Germanium dioxide, uses and miscellaneous
 RL: USES (Uses)
 (plasma-assisted chemical vapor deposition of **optical waveguides** from silica film and)
 IT 7631-86-9, Silica, uses and miscellaneous
 RL: USES (Uses)
 (plasma-assisted deposition of **optical waveguides** from germania and)

L24 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1989:222220 HCAPLUS

DOCUMENT NUMBER: 110:222220

TITLE: Signal dispersion in single-mode fiber-**optic waveguides** with a fluorine-doped cladding

AUTHOR(S): Karasek, Miroslav

CORPORATE SOURCE: Ustav Radiotech. Elektron., CSAV, Prague, Czech.

SOURCE: Slaboproudny Obzor (1989), 50(1), 17-21

CODEN: SLOZAE; ISSN: 0037-668X

DOCUMENT TYPE: Journal

LANGUAGE: Czech

AB A comparison of the results of calculating the spectral characteristics of chromatic dispersion of single-mode fiber-**optic waveguides** with a F-doped cladding with those obtained by measurement is given. A math. model is used to study the effects of refractive index-profile defects of the **waveguide** core and cladding detected by measuring the refractive index profile of the preform. Chromatic dispersion was measured by the phase method. Good agreement was obtained between the calculated and measured values of com. types of **optical waveguides**.

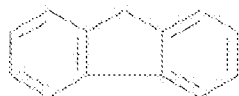
IT 86-73-7, Fluorene

RL: PRP (Properties)

(quartz **optical** fibers with cladding containing, signal dispersion in single-mode)

RN 86-73-7 HCAPLUS

CN 9H-Fluorene (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 ST fiber **optical** fluorine cladding dispersion
 IT **Optical** dispersion
 (in quartz single-mode **optical** fibers with
 fluorine-doped cladding)
 IT **Optical** fibers
 (quartz, single-mode, with fluorine-doped cladding, signal
 dispersion in)
 IT 60676-86-0, Vitreous silica
 RL: USES (Uses)
 (**optical** fibers from, with fluorene-doped cladding,
 signal dispersion in single-mode)
 IT 86-73-7, Fluorene
 RL: PRP (Properties)
 (quartz **optical** fibers with cladding containing, signal
 dispersion in single-mode)

L24 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2007 ACS on STN

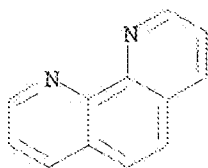
ACCESSION NUMBER: 1987:81211 HCAPLUS
 DOCUMENT NUMBER: 106:81211
 TITLE: Single **optical** fiber sensor for
 measuring the partial pressure of oxygen
 INVENTOR(S): Murray, Richard C., Jr.; Lefkowitz, Steven M.
 PATENT ASSIGNEE(S): Gould, Inc., USA
 SOURCE: Eur. Pat. Appl., 21 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 190830	A2	19860813	EP 1986-300264	198601 16
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EP 190830	A3	19880427		
R: BE, DE, FR, GB, IT, NL				
JP 61178646	A	19860811	JP 1986-21326	198602 04
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PRIORITY APPLN. INFO.:			US 1985-698282	A 198502 04

AB A miniaturized, fast, sensitive O₂ sensor for use in medical applications consists of a plastic **optical waveguide** having a cladding and a core. A portion of the core is exposed, plasticized, and a fluorescent, O₂-sensitive dye is integrated therein. A 250- μ m diameter plastic **optical** fiber having a polyacrylic core and a fluorinated acrylic cladding was dipped at one end in AcOEt to dissolve the cladding. After removal of the cladding, the exposed core was dipped into a solution of (4,7-diphenyl-1,10-phenanthroline) Ru(II) perchlorate and a plasticizer (e.g. diisobutyl phthalate) in CH₂Cl₂. The other end of

the fiber is adapted receive light from a light source and to provide an outlet for fluoresced light to go to a signal detector. The intensity of fluorescence is dependent on the partial pressure of O₂ in the environment. The device is responsive to changes in the partial pressure of O₂ of 1-5 mmHg.

IT 66-71-7D, 1,10-Phenanthroline, derivs., transition metal complexes, salts
 RL: ANST (Analytical study)
 (in oxygen sensor, plasticized matrix on fiber-optic waveguide containing)
 RN 66-71-7 HCAPLUS
 CN 1,10-Phenanthroline (CA INDEX NAME)



IC ICM G01N021-64
 ICS G01N021-77
 CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 79
 ST oxygen sensor fluorescence waveguide; fiber optics
 oxygen sensor fluorescence; ruthenium phenanthroline oxygen sensor
 IT Paraffin waxes and Hydrocarbon waxes, biological studies
 RL: BIOL (Biological study)
 (polymer plasticizer, in oxygen sensor, oxygen-responsive fluorescent salt on fiber-optic waveguide in relation to)
 IT Vinyl acetal polymers
 RL: ANST (Analytical study)
 (butyrals, oxygen sensor optical waveguide core containing, oxygen-sensitive fluorescent salt in)
 IT Transition metals, compounds
 RL: ANST (Analytical study)
 (complexes, phenanthroline derivative, salts, in oxygen sensor, plasticized matrix on fiber-optic waveguide containing)
 IT Waveguides
 (optical, fiber, plasticized polymer core containing oxygen-responsive fluorescent salt in, as oxygen sensor)
 IT 141-78-6, Ethyl acetate, biological studies
 RL: BIOL (Biological study)
 (as solvent, for optical waveguide cladding removal in oxygen sensor manufacture)
 IT 66-71-7D, 1,10-Phenanthroline, derivs., transition metal complexes, salts 7439-88-5D, Iridium, 1,10-phenanthroline derivative complexes, salts 7440-04-2D, Osmium, 1,10-phenanthroline derivative complexes, salts 7440-16-6D, Rhodium, 1,10-phenanthroline derivative complexes, salts 7440-18-8D, Ruthenium, 1,10-phenanthroline derivative complexes, salts 63373-04-6D, salts 75213-31-9
 RL: ANST (Analytical study)
 (in oxygen sensor, plasticized matrix on fiber-optic waveguide containing)
 IT 9002-86-2, Polyvinyl chloride 9003-20-7, Polyvinyl acetate
 RL: ANST (Analytical study)

- (oxygen sensor **optical waveguide** core containing, oxygen-sensitive fluorescent salt in)
- IT 129-00-0D, Pyrene, derivs. 198-55-0D, Perylene, derivs.
 RL: ANST (Analytical study)
 (oxygen-sensitive fluorescent dye, in oxygen sensor, fiber-**optic waveguide** in relation to)
- IT 65-85-0D, Benzoic acid, derivs. 84-69-5, Diisobutyl phthalate
 88-99-3D, derivs. 111-20-6D, Sebacic acid, derivs. 124-04-9D, Adipic acid, derivs.
 RL: ANST (Analytical study)
 (polymer plasticizer, in oxygen sensor, oxygen-responsive fluorescent salt on fiber-**optic waveguide** in relation to)
- IT 7782-44-7, Oxygen, biological studies
 RL: BIOL (Biological study)
 (sensor for, plastic **optical waveguide** and oxygen-sensitive fluorescent dye in plasticized matrix in relation to)
- IT 64-17-5, Ethanol, biological studies 67-64-1, Acetone, biological studies
 RL: BIOL (Biological study)
 (solvent, for expansion of **optical waveguide** core in oxygen sensor manufacture)
- IT 75-09-2, Methylene chloride, biological studies 109-99-9, Tetrahydrofuran, biological studies
 RL: BIOL (Biological study)
 (solvent, for expansion of, **optical waveguide** core in oxygen sensor manufacture)

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ACCESSION NUMBER: 1987:46867 HCAPLUS

DOCUMENT NUMBER: 106:46867

TITLE: **Optical** sensor for monitoring the partial pressure of oxygen

INVENTOR(S): Murray, Richard C., Jr.; Lefkowitz, Steven M.

PATENT ASSIGNEE(S): Gould, Inc., USA

SOURCE: Eur. Pat. Appl., 21 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 190829	A2	19860813	EP 1986-300263	19860116
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EP 190829	A3	19880427		
R: BE, DE, FR, GB				
US 4752115	A	19880621	US 1985-699515	19850207
			<--	
JP 61182557	A	19860815	JP 1986-21327	19860204
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PRIORITY APPLN. INFO.:

US 1985-699515

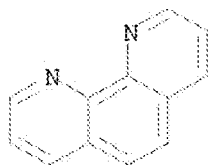
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- AB An **optical** sensor for determination of pO₂ in various environments for medical applications consists of a miniature, easily fabricated device made of a single **optical** fiber designed for remote applications, which is not subject to the effects of membrane contamination, and is suitable for use in small channels such as blood vessels and single-lumen medical catheters. A 250- μ m plastic **optical** fiber was cut at 1 end at a 20-30° angle from the fiber axis, and was dipped into a solution consisting of 0.0254 g tris(4,7-diphenyl-1,10-phenanthroline)ruthenium(II) perchlorate, 1.00 g PVC, and plasticizer (e.g. 1.00 g didecyl phthalate) in 25 g THF to form a plasticized polymer coating on the fiber containing O₂-sensitive fluorescent dye. The other end of the fiber was adapted to receive light and to provide an outlet for fluorescent light to go to a signal detector. The intensity of fluorescence is related to the pO₂ in the environment. The sensitivity of the device is .apprx.1-5 mm Hg of O₂.
- IT 66-71-7D, 1,10-Phenanthroline, derivs., transition metal complexes, salts
 RL: ANST (Analytical study)
 (in oxygen sensor, plasticized matrix on fiber-optic waveguide containing)
- RN 66-71-7 HCAPLUS
- CN 1,10-Phenanthroline (CA INDEX NAME)



- IC ICM G01N021-64
 ICS G01N021-77
- CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 79
- ST oxygen sensor fluorescence **waveguide**; fiber **optics**
 oxygen sensor fluorescence; ruthenium phenanthroline oxygen sensor
- IT Polymers, uses and miscellaneous
 Rubber, silicone, uses and miscellaneous
 Urethane polymers, uses and miscellaneous
 RL: USES (Uses)
 (plasticized, oxygen-responsive fluorescent salt in, on fiber-optic **waveguide** in oxygen sensor)
- IT Vinyl acetal polymers
 RL: USES (Uses)
 (butyrals, plasticized, oxygen-responsive fluorescent salt in, on fiber-optic **waveguide** in oxygen sensor)
- IT Transition metals, compounds
 RL: ANST (Analytical study)
 (complexes, with phenanthroline derivs., in oxygen sensor, plasticized matrix on fiber-optic **waveguide** containing)
- IT **Waveguides**

- (optical, fiber, in oxygen sensor, oxygen-responsive fluorescent salt immobilized on, with plasticized polymer)
- IT 7782-44-7, Oxygen, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, sensor for, oxygen-responsive fluorescent salt in plasticized polymer on fiber-optic waveguide in)
- IT 66-71-7D, 1,10-Phenanthroline, derivs., transition metal complexes, salts 7439-88-5D, Iridium, phenanthroline derivative complexes, salts 7440-04-2D, Osmium, phenanthroline derivative complexes, salts 7440-16-6D, Rhodium, phenanthroline derivative complexes, salts 7440-18-8D, Ruthenium, phenanthroline derivative complexes, salts 63373-04-6 75213-31-9
RL: ANST (Analytical study)
(in oxygen sensor, plasticized matrix on fiber-optic waveguide containing)
- IT 9002-86-2, Polyvinyl chloride 9003-53-6, Polystyrene 9011-14-7, Polymethyl methacrylate
RL: ANST (Analytical study)
(plasticized, oxygen-responsive fluorescent salt in, on fiber-optic waveguide in oxygen sensor)
- IT 84-61-7, Dicyclohexyl phthalate 84-77-5, Didecyl phthalate 119-06-2, Ditridecyl phthalate
RL: ANST (Analytical study)
(polymer plasticizer, in oxygen sensor, immobilized oxygen-responsive fluorescent salt on fiber-optic waveguide in relation to)
- IT 77-92-9D, Citric acid, derivs. 88-99-3D, Phthalic acid, derivs. 111-20-6D, Sebacic acid, derivs. 124-04-9D, Adipic acid, derivs.
RL: ANST (Analytical study)
(polymer plasticizers, in oxygen sensor, immobilized oxygen-responsive fluorescent salt on fiber-optic waveguide in relation to)

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